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ATHENS: A BALKAN CAPITAL

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Athens has contributed so much to our civilization and culture thruout the ages that, in our effort to pay tribute to it we often think only in terms of the past. We are prone to forget that Athens is a modern capital city thru which courses the life blood of a modern State. A large portion of tourists, travellers and scholars who visit the city every year see only ruins of a former greatness which obscure the present day life and urban developments.

THE GEOGRAPHICAL SETTING

Where an extension of the Pindus Mountains forms a peninsula between the island of Euboea and the Peloponnesus lies the small district of Attica. Its easterly shores are washed by the ever blue waters of the Aegean Sea while on the west are the equally blue waters of the Gulf of Aegina. The terrain of Attica is one of relatively low mountains which because of the steepness of their slopes assume a majesty equal to that of much higher peaks. The agricultural portion of Attica consists of small plain areas fringed with alluvial fans. Here man has pushed his agricultural activities up hill on to the alluvial fans and even on to the mountain sides where he has carved terraces out of the reluctant material.

The largest of the areas is the Athenian plain, which is surrounded by mountains (Fig. 1) except on its southwestern side where it opens on to the Gulf of Aegina. Two important rock prominences, Lykavittos Hill and the Acropolis protrude from the lowland. On and around the latter was founded the original city of Athens while the former reared its heights well out upon the horizon. Modern urban developments have progressed at such a pace that both topographic features are now completely surrounded by row after row of houses (Fig. 1).

Tho not a sea port, Athens has the splendid, natural harbor, the

Piraeus, with which, in early times the city was connected by a protected way.[1] Today a modern highway serves the same purpose, and the growth of population has all but joined the two cities into one.

Nature thruout Greece, and especially in Attica, has always been niggardly of its goods. Paucity of industrial resources has ever been combined with lack of fertile soil. The climate adds, to such disadvantages, a long dry summer season. What sustenance is de-

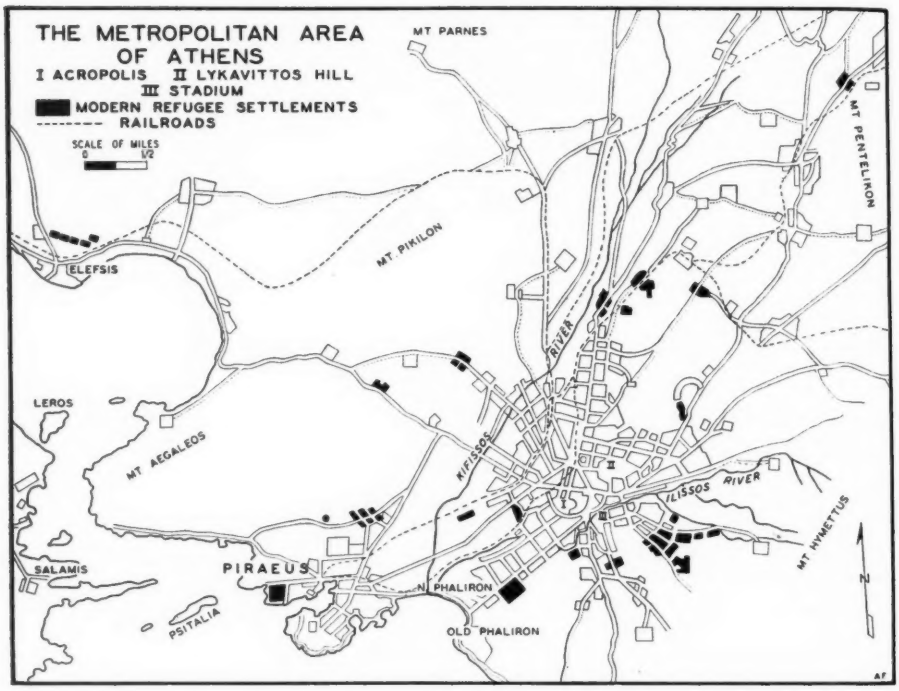


Fig. 1

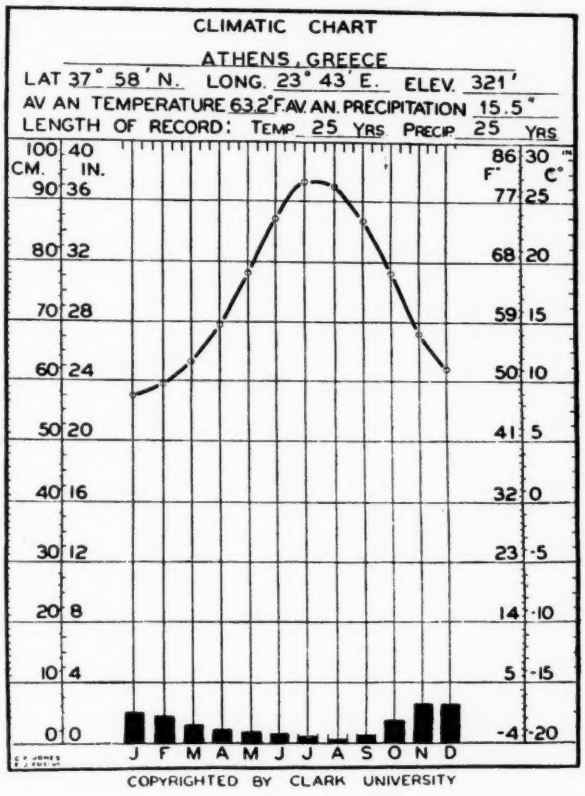
rived from the soil is wrought with the greatest of human labor. From the earliest times, therefore, the city has been more interested in commerce, trade and government; in which fields of endeavor fairer returns for energy expended could be expected, than in agriculture or industry.

Altho the physical features of the environment combine to make human life rather difficult, they also combine to create exceeding natural beauty. Athens has one of the most beautiful landscapes in the world—a rare combination of bluest water, cloudless skies and purple-hued heights. When the setting sun casts its light on Mt.

[1] Ellen Semple, Influences of Geographic Environment, p. 250

Hymettus, the purple shadow there makes it easy to understand why the citizens of Athens long ago referred to their city as "Iostephanos" (the violet crowned).

Across the plain run two rivers; the Illissos River (Fig. 1) which has its head waters on the western slopes of Mt. Hymettus and flows thru the southeastern section of the city emptying into the Gulf of Phalirou, and the Kifissos River which rises in the Parnes Mountains to the north and flows southwest thru the western outskirts of the city, emptying also into the Gulf of Phalirou. Neither has enough water to adequately supply the city. In the long dry summer periods they become mere trickles of water and, in exceptionally dry seasons, disappear altogether.


CLIMATIC CHART
ATHENS, GREECE
LAT 37° 58' N. LONG. 23° 43' E. ELEV. 321'
AV AN TEMPERATURE 63.2° F. AV AN. PRECIPITATION 15.5"
LENGTH OF RECORD: TEMP. 25 YRS PRECIP. 25 YRS
CM. IN. F° C°
100 40 86 30
90 36 77 25
80 32 68 20
70 28 59 15
60 24 50 10
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40 16 32 0
30 12 23 -5
20 8 14 -10
10 4 5 -15
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Fig. 2

Lack of water has been one of the problems of Athens since its early days. In the second century A.D. Emperor Hadrian built a now famous aqueduct to the city from galleries driven into the sides of Mt. Pentelikos, until 1926 the sole source of water for the city. With increase in population the water supply, which had always been limited, became critically insufficient, and an American engineering company was commissioned to clean and enlarge the galleries and to erect a dam which would provide an adequate water supply for the city. A large dam of white marble (the cheapest durable material available, for it is quarried near the site of the dam) has been completed at Marathon, on approximately the spot where Miltiades defeated the invading Per-

sians.[2] The structure impounds a huge lake which supplies ample water for Athens and the Piraeus. The American firm holds the concession to sell water to the city for a period of twenty-five years.

Athens has Mediterranean climate (Fig. 2). The folk of Athens look forward with such eagerness and pleasure to the coming of spring that there, at least, spring begins the year, and all nature responds to the sun's warmth and to available moisture. Every plant is forced to complete its vegetative cycle before summer drought begins, thus producing an abundance of flowers of indescribable beauty—such as is found only in Mediterranean lands. The flower-covered landscape of Athens can be most favorably compared with that of southern California. In addition to their beauty these flowers have some economic significance tho they are not now used extensively.

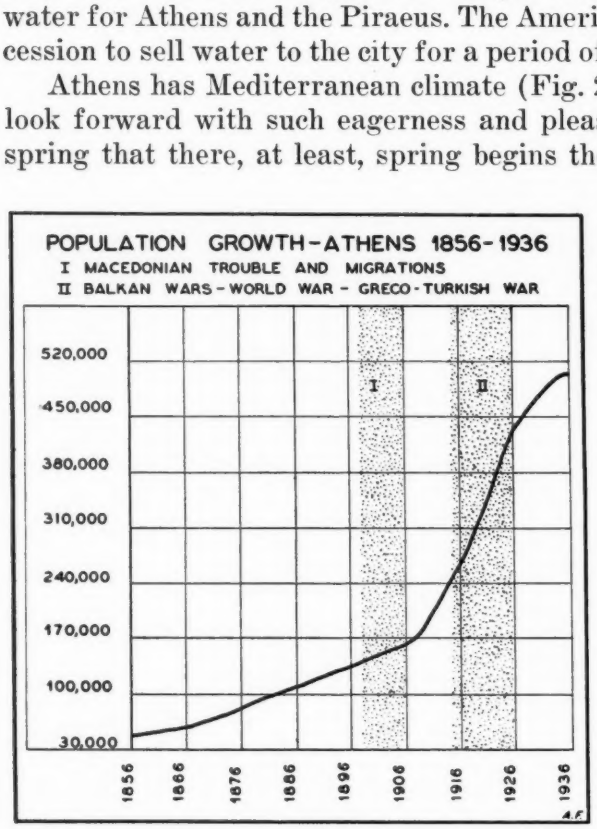

Fig. 3

Spring is followed by a long, hot, dry summer of cloudless skies, when no rain falls, the green of spring darkens into brown or purple, dust fills the air and the temperature rises to 100° F. on the warmer days. In autumn clouds appear and the winter rains follow quickly. Winter temperatures seldom fall below freezing point except on a few occasions when the Etesian winds blow from the north, and light snow falls. The dampness combined with the winds makes the population shiver with cold, and hope for a warmer day on the morrow. The average house of Athens, like those of nearly every other Mediterranean community is not equipped for proper heating in cold weather. The people seem content to shiver knowing that the cold period does not last long.

[2] Eliot G. Mears, Greece Today, p. 124

The snow at times remains for weeks on the mountain tops, adding another feature of beauty to the landscape, but the city, on the lowlands, being much warmer than the heights, is never under a blanket of snow for more than a few days in extreme cases for generally the snow melts within a few hours.

URBAN DEVELOPMENTS

Athens has had a most remarkable growth, based partly on normal increase and partly on artificially accelerated migration. In 1856, the city, not including the Piraeus or the Old and New Phalarons contained 30,969 persons. From that time until 1907 it grew steadily being affected somewhat by wars in Europe (Fig. 3). However, in 1920 came the Greco-Turkish War in Anatolia in which Greece met an overwhelming defeat. Following the war one of the greatest movements in history, the so-called exchange of populations between Turkey and Greece[3] was arranged, and directed, by the League of Nations. Nearly two million refugees poured into Greece

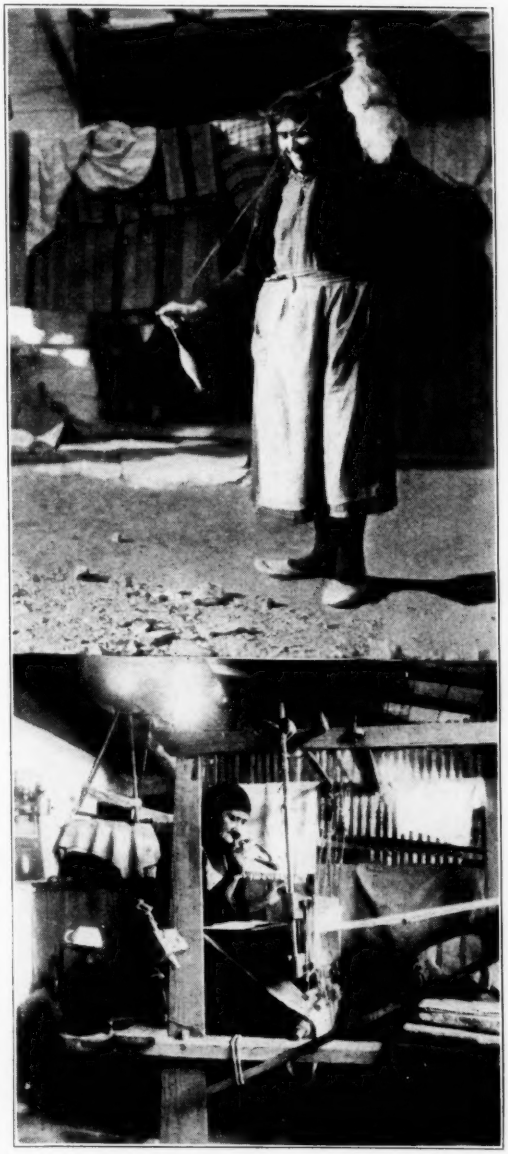

Fig. 4. The refugees who settled in and around Athens brought with them the ability to do industrial work which required skill. While methods are primitive and the work is done mostly by hand (spinning or weaving) the industrial activity supports a large number of people.

[3] Stephen P. Ladas. The Exchange of Minorities, Bulgaria, Greece and Turkey, Part II, pp. 335-591. A complete account of the details of exchange.

of whom many were sent to Macedonia where, by making the composition of the population dominantly Greek, they solved to a marked degree the "Macedonian Question." However, many of them settled in and around Athens (Fig. 1). Between 1920 and 1928 the population of Athens nearly doubled (Fig. 3). The rapid growth of population placed a tremendous burden upon the Greek government. To house, feed, employ and absorb into the State such a large number of people in such a short time was a most difficult problem. The government, with the help of various charities, constructed row upon row of small houses which it sold to the refugees on long-term contracts. The people who settled in and around Athens were for the most part artisans who possessed skill derived from long experience in their respective trades (Fig. 4) and they markedly increased the industrial activity of the community.

Textile and rug industries experienced marked development after the exchange of populations. Before the Greco-Turkish War, Turkey had built up considerable trade in "Turkish rugs," which had been made chiefly by Greek and Armenian artisans living in Anatolia. With the exodus of the Symrna district, the center of the "Turkish rug" business shifted to Athens where most of the workers had settled.

PRINCIPAL IMPORTS AND EXPORTS OF GREECE

1935

EXPORTS

Leaf tobacco	$32,231,276
Currants	8,071,988
Olive oil	2,809,668
Wine	1,358,917
Sultana and Rozakia raisins	3,302,379
All others	17,035,194

(Exports to the United States, $11,039,224)

IMPORTS

Wheat	$12,907,040
Coal	3,817,828
Sugar	2,528,111
Construction lumber	5,054,344
Woolen yarn and thread	2,620,135
All others	71,576,302

(Imports from the United States, $6,154,135)

Source: The United States Consul General at Athens, Greece

Similarly, the textile industry which had always engaged chiefly in the manufacture of short fiber cotton cloth for local consumption,

found its market increased at the same time that its supply of skilled labor was augmented. The resultant expansion of industry adequately supplied the enlarged local market and resulted in an increased importation of cotton and cotton thread. The silk and woolen textile industries also enjoyed some expansion.

None of the leading exports of Greece is manufactured for Athens, the industrial center of the country, confines its industrial interests and activities to supplying the local market. The olive oil industry, one of the largest in Greece is not confined to Athens for the olive tree is common thruout much of Greece. Leaf tobacco which is the largest single export of the country passes, to some extent, thru Athens tho scarcely any of it is manufactured there—merely sorted and handled.

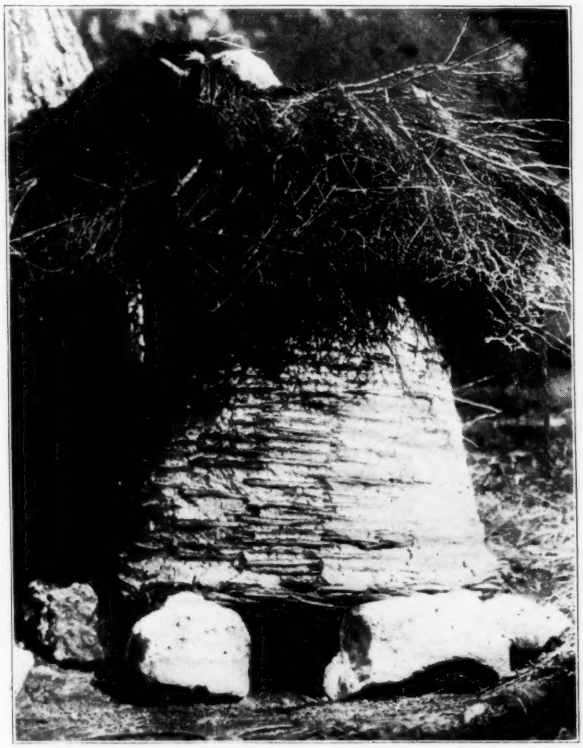

Fig. 5. A close-up view of one of the many bee hives of Mt. Hymettus.

Athens, the capital as well as the industrial, economic, cultural and commercial center of the Greek Kingdom, is the Paris of the Balkans. Much of its metropolitan character is due to the importation of ideas and funds from the United States. In the past 100 years innumerable Greek citizens have migrated to this country, become citizens, worked thriftily and saved substantial sums of money to enable them to return to their native land either to retire or to engage in business. Similarly innumerable American citizens of Greek ancestry send regular monthly checks to their relatives in Greece. Importation of American ideas is reflected in the types of streets and roads of Athens and in displays in shop windows. Such

items of refreshment as ice cream and malted milks which are unobtainable in most other cities of the Balkans are common in Athens.

The agricultural products of the Athenian plain are the chief source of food for the city as well as a partial source of raw material for its industries. The Mediterranean climate besides favoring the growth of grain, the vine, and olives, favors the growth of numerous flowering plants rich in nectar, and eastward from the city, on the slopes of Mt. Hymettus, peasants tend bee hives from which are taken an abundant supply of honey for local consumption. A small export trade has been built up with the result that Hymettus honey is well known in Europe and in America (Fig. 5).

Fig. 6. A peasant of the Athenian plain. Note his crook stick and his cape which is made from the wool of his sheep. Notice his slipper-like shoes.

The peasant of the Athenian plain leads a difficult life (Fig. 6). In spite of his hard work he is unable to provide for himself and family more than the bare necessities of life. His brother, the industrial or commercial worker in the city, is not much better off, for even the skilled labor he does in such industries as the textile, olive and tobacco enterprises enables him to earn but a few cents a day. The average factory workers do not receive more than eighty or ninety cents a day at the very most and many workers earn even smaller sums, from which taxes must be paid and food and clothing procured, to say nothing of housing and other family expenses. Life is possible only by the greatest simplicity and economy. One or two rooms house the average family while the simple fare consists of bread, olives, goat cheese, and perhaps on special

occasions, a little mutton. Vegetables add something to the diet but they do not form its basis. Because of the lack of grasses sufficiently rich in feed value, cattle of any kind are scarce and cow's milk and beef are at a great premium, to be afforded only by the upper classes who own or direct the city's commerce, industry or politics.

And yet the life of Athens is not drab. The beautiful setting of the city in itself, contributes something of gaiety, while its wide

Fig. 7. A view of a section of Athens. Note the alluvial fans on the mountain slope in the background. The modern marble stadium is seen in the center right of the picture while the great public garden, the Zappeion, is in the center of the picture.

clean streets, large public parks and gardens afford places of amusement for everyone. In spite of the generally low economic status of the average citizen, the city supports a national theatre, an opera company, and numerous movie houses and national and private museums afford opportunity for study to citizens and foreigners alike. The city which is the home of the National University also maintains a very good system of primary and secondary education. As in ancient days, athletics are popular, especially in the field and track events. The modern marble stadium which stands on the site of the original Olympic games (Fig. 7) is in constant

use and additional athletic fields devoted chiefly to soccer dot the city.

The daily life of Athens begins early in the morning, long before the rising sun has splashed the eastern sky with pastel color. By five-thirty or six o'clock the whole city is engaged in its business at full force. But, the summer heat is so oppressive that when noon comes, business stops. Metal shutters are pulled down over store fronts, traffic ceases, and the city goes to rest. A visitor arriving at two o'clock on a summer afternoon might justly feel that he was entering a dead city. By four in the afternoon, however, the city is again humming with activity. Business houses, stores and shops remain open until eight or nine o'clock, about which time the evening meal is served in the average home and in all public dining places. After dinner, the various forms of amusement, previously mentioned, occupy the attention of the people far into the night. Sleep for the Athenian comes in two short periods, the noon day rest and the relatively short night period.

As in other Near Eastern cities, the coffee house has played a great part in the lives of the people. Home life as we know it with the family circle, the library, the radio and the fireplace does not exist in Athens. For years the coffee house has in many respects taken the place of the drawing room, for the average citizen. Seated on crudely built little stools men discuss the affairs of the day while sipping very black, sweet "Turkish coffee" from tiny cups.

The people of Greece have always been politically minded and the modern Athenians are by no means an exception to this rule. The topography of Greece originally cradled numerous city-states and today it cradles localized political thought within the structure of the Greek State. Athens alone supports more than a dozen newspapers, each devoted to its own editorial-political point of view. Unlike our newspapers the Greek press concerns itself chiefly with news of political affairs while the feature page, the comic page, the woman's page and the society page are entirely lacking.

Greek being a difficult language and the system of general education being a relatively new institution, the coffee house served as a news dispatching center. Those who could read the papers related the news to those who could not and heated political discussion nearly always followed. According to a recently published Athenian newspaper, the new dictatorship of Greece has forbidden the operation of coffee houses. From a dictator's point of view this is easily

understood—free political discussion is never agreeable to a dictatorial form of government, but, it is regrettable that the average citizen should be deprived of one of his chief pleasures. What form of social intercourse will arise as a substitute remains to be seen.

CONCLUSION

The geographical environment of Athens—its pleasant climate, its position near the sea, its enveloping, low lying mountains, its flat plains and their outcropping rocks, its relation to the rest of Greece and its native vegetation—has thruout the ages given the city stability and endurance. Periodically one geographic element comes into greater importance than the others, but, changing conditions cause it to fade into the background and another arises. Always the geographical elements combine to provide protection, as in the days of the city-state, or industrial, commercial or agricultural advantages as in modern times. Athens is the natural center of government, commerce, industry and business and these its people have united into a metropolitan atmosphere unique in southeastern Europe. It is truly the Paris of the Balkans, combining as does Paris, France, the most modern of the cultural, economic, and spiritual elements of the country.

MAKING THE TEACHING OF GEOGRAPHY EFFECTIVE*

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In geography work we are more fortunate than workers in most sciences in that we always have our laboratory with us. I happen to be teaching now in northeastern Ohio and have Akron, a busy manufacturing city, almost at my front door. Its crowded streets, its tall buildings in the down town district, its huge rubber factories, its factory residential districts, as well as its sections with estate-like homes, provide me with a very fascinating laboratory in which to work. I shall draw upon this laboratory for my examples.

In all my experience with pupils in the grades, in the junior high school, and in college classes, I have found three guide posts of great help to me in making my geography teaching effective.

IMPORTANCE OF REALITY IN EFFECTIVE TEACHING

I like to think of the first guide post as carrying just one word, *reality*. If I can make the region or place we are studying as real to my pupils as the places and people they see every day, then one of my major problems as a teacher has been solved. What are these things which must be made real and how do I accomplish this phase of the work? Of course, before I can hope to make the things in the landscape, both man made and natural, real to my pupils, they must be real to me. I must prepare myself for my teaching by first visualizing the outstanding cultural or man made characteristics and the natural features and conditions of any region or area I wish to present to my pupils. For example, if the study of Akron is to be made real, I must see in Akron a city with crowded streets, tall buildings, and many factories. I must see many of these factories as a special kind of factory, namely those in which the manufacture of rubber is dominant. Airplane pictures of Akron might supply me with these data and help me to visualize the city just as I can actually do in field work of a reconnaisance type.

SIGNIFICANCE OF DISCOVERING REASONS

On my second guide post is another single word, *reasons*. Similarly, if I wish to guide my pupils to find the reasons for the

* Presented before the Geography Section, Wisconsin Education Association, November 6, 1936.

ways of living and the kinds of work people are doing in the lands they study, I must myself first discover such reasons. For example, when I find out that there are twenty large rubber factories in Akron in which every form of rubber from rubber bands to balloons and dirigibles is made; where 125,000 automobile tires are made daily; and in which a large share of the workers of Akron are employed, I search to discover facts which will help to explain why Akron is the great rubber center of the United States. There are always three types of factors which I investigate to help solve my problems. These are first, the factors of the natural environment, second, factors in the cultural environment and third, factors that have to do with the nature of the people themselves, their insights, abilities, and attitudes.

To answer why Akron is the rubber center of our country, I investigate the natural setting which men had to use to develop the city. Akron is in northeastern Ohio between the Cuyahoga River which drains to Lake Erie and the Muskingum draining to the Ohio. There was a gap in the water route here which handicapped direct water transport from the Ohio River to the Lake. To overcome this handicap men constructed the Ohio Canal so that this cultural environmental factor, the canal, was added to the natural setting, which included likewise falls in the Cuyahoga River which could be used for power. Factories in the town used native clays from nearby deposits making bricks and other clay products. The fertile farmlands nearby furnished oats and other grains for the mills which made use of the power from the falls. The Canal was used to bring in coal from the Appalachian coal fields not far away—another factor in the natural environment. Then railroads, a cultural environmental factor, followed the route of the canal, and Akron had three main railroads to give it excellent rail connections. The insight of Dr. B. F. Goodrich helped him in 1869 to decide on Akron as the place to erect his rubber plant which he wanted somewhere west of the Appalachian Mountains. In Akron he found the people who could and would help him with the money he needed to build his factory. Thus another cultural environmental factor enters into the interpretation—the capital available. Of course, the process of vulcanization had already been discovered by Charles Goodyear —still another cultural environmental factor. At first bicycle tires, heels, soles, beltings for machinery and other rubber products were manufactured. Other concerns located in Akron as often happens after someone has made a successful start. It was not until the decade 1910 to 1920, however, that the big change took place. In this

period, the population tripled and the wage earners in factories went from almost 16,000 to 65,000. The cultural environmental factor that helps to explain this change was the demand for tires for the rapidly growing automobile industry. Akron has the natural advantage of not being far from the heart of the automobile industry. Taking into consideration the advantages of its railroad connections and of the nearby deposits of coal from the Appalachian coal fields as well as such local advantages as plentiful supplies of clear water from many fresh water lakes near the city, we can see some reasons why Akron, with its early start in the rubber industry, is the great rubber center of this country. This brings out the three types of factors mentioned earlier. The nearby deposits of coal, the fresh water lakes, the falls, the gap between the rivers are factors in the natural environment. The railroad connections, the capital, the invention of vulcanization, the canals, are samples of cultural environmental factors. Whereas the insight of Dr. Goodrich and of those who helped him typify the importance of consideration of the nature of the people in the development of this industry. In order to find these reasons I had to investigate many sources but it is an example of the preparation which I must make before I can hope to guide pupils to find reasons. In many cases the maps, pictures, statistics, and reading matter in our textbooks contain these facts and we do not need to do the type of research and investigation ourselves which is represented in the above findings about Akron.

Consideration of Background of Pupils

Thus far, I have spoken only about my preparation for guiding pupils to think geographically. Without such preparation, however, I have found that I can not do effective teaching whether it be at the fourth grade level or in college. Before I speak more about how to guide the pupils I need to, myself, follow the directions on my third guide post which says, *background*. I must know the past experiences of my pupils before I can direct their activities. I must know what map reading abilities they have, what landscape reading abilities, what technical and semi-technical language reading abilities they have, what ability they have to reason in terms of given geographical ideas and understandings, and what ability they have to apply such ideas in coping with new situations in every day living, and whether they have acquired the habit of so doing. This

may sound rather formidable. It is not, however, for our guidance means to introduce these informally. A beginning fourth grade child does not possess any of these abilities and could not be expected to discover the reasons by himself, presented in the little study of Akron. His background for such reasoning must be developed gradually. Our guidance should help pupils to gain these various abilities thru providing experiences which will help them to become more and more independent in their use of the various tools at their disposal. I have found in my college teaching that my pupils do not have the landscape and map reading abilities which they need to do effective geographical thinking. A population map is something which they look at but do not read thru to the actual landscape. Therefore they need experiences which will make this map real. When the population map shows that the region of rainy tropical climate has from less than one, or from one to eight, or from eight to sixteen people to the square mile, we translate these facts into number of houses per square mile. Before this takes on real meaning, we need to have a square mile in mind. Our school campus covers approximately 100 acres and when we think of almost 6½ times that area without a single habitation or with 2, or at most, 4 houses on it, we get a real feeling of sparse population. By such experiences we supply that part of the background which earlier experiences had not given. Similarly we can not understand, in these college classes, what it means for this rainy tropical climate to have 80 to 100 inches of rainfall annually, if rainfall has not been made real to us. When I ask these college students how much rainfall we have in a year in northeastern Ohio, they either have no idea or vary in their ideas from 10 inches to 100 inches. "How much rain falls here in a single shower?" is another question they can not answer. These college students differ in their ideas from less than an inch to six inches for one shower. These students have never had the experience of putting out a tomato can or other straight sided vessel and themselves measuring the rain that fell in a particular period, that is rainfall has never been made real to them. When the rainfall of their home region which they have experienced is expressed in terms of distributions and amount, they have a sort of measuring stick to use to help visualize the rainfall of other regions by comparison and contrast.

I have spoken thus far only about my own preparation for teaching, first how I make the region real to myself and second,

the reasons for the outstanding cultural characteristics of the region. The third consideration which is really a part of my preparation is knowing the background of my pupils.

Background of Junior High School Pupils

This consideration of the background of my pupils brings me to the subject of the junior high school work. What is the background of junior high school pupils? Of course this varies from place to place depending on the work of the elementary school. If the work of the elementary school has been successful, we might expect our junior high school pupils to have some of each one of the five abilities mentioned earlier.

They should be able to use all types of semi-pictorial map symbols, as well as the more abstract symbols such as those on color band, dot and spot maps. This means that they would be able to use all types of maps except iso-line maps such as contour maps, those using isotherms, isohyots, isopleths. They would be able to read practically all cultural and natural landscape features since their study would have taken them into all countries of the world where they would have seen the various types of land uses. There will be some technical and semi-technical terms which they may need to add to their language reading abilities such as alluvial fans, balance of trade, and a few others. They will have some ability to reason in terms of geographical understandings and to apply these ideas to every day living. For example the 7th grade boy who criticised the statement, "The sea has made Britain famous," by saying, "To give the sea all the credit while coal and man step aside isn't fair" showed that he could think in terms of geographical ideas and would be able to apply this type of thinking in his reactions to such everyday problems as the Great Lakes Waterway. This statement about the sea was taken from a senator's argument for that project.

Presentation Suggestions

Many of our pupils come to junior high school without these abilities. Therefore the junior high school teacher's problem is to provide activities which will make up for the lack of earlier experiences along this line. This does not mean that the same materials should be presented to junior high schools pupils as to those in the elementary school but it does mean that the junior high school teacher must take special pains to provide for the reality and

reasons guide posts. In most of the seventh grades in junior high school the work consists of the study of certain political regions completing the cycle of regional study. In the eighth grade, however, and in the ninth or later senior high school work the geography work generally trys to develop understandings of world distributions. Before briefly sketching a blue print lesson plan of this second type of junior high school or high school unit, I might state a few guiding rules for presentation. First, since all teaching is guidance, the teacher's task is to provide for activities thru the exercises which she sets up. Some of our books do that for us. Where that is missing the teacher may be helped by the following suggestions. In the initial exercises, direct the attention of the pupils to the outstanding cultural characteristics of the region or of the pattern of distribution to be presented. If these outstanding cultural characteristics are brought out sharply, they should arouse the pupils to asking "why" questions or setting the goal for study. When the goal has been set and the pupils know what it is they are going to do, the teacher must provide both the exercises and materials for the work to continue. The text usually supplies all the materials, to be sure sometimes widely scattered. The teacher who in her own preparation has found reasons for the outstanding cultural characteristics knows to just what maps, pictures, grafs, reading matter, etc., in the text, to direct her pupils. She needs only to set up an exercise or exercises by which the pupils themselves will discover what she knows will help solve their problems. To expect children to search thru a great mass of material first in one source and then in another, perhaps materials very much alike, is, in my opinion, a very wasteful process. If the particular text does not contain the material needed, the teacher will find it not only time saving but also more satisfactory if each member of the group, is directed to specific maps, pictures, reading matter, so that each pupil will find the reasons within the comprehension of the class. I cannot overemphasize the importance of this, because so frequently where one child finds one reason, another, another, etc., the child develops that warped type of thinking represented in the statement made earlier—"The sea has made Britain famous." Comparing and checking lists of factors discovered and discussing how these apply, will provide for socialization and build up in each child his ability to do the type of thinking we are after. Finally, in summary exercises those essential cultural items which

characterize the region or distribution, and the factors which help to explain this characterization need to be pulled together.

I have found that I have much the same problems in my freshman college classes as I had with my junior high school pupils, namely their background has been such that I must provide at the same time that the work of the college level is being presented those experiences they need to really understand their work.

An Example of Effective Guidance

The following exercises which I would use with a junior high school class working on a unit on rubber may show how the preparation and guidance principles stated earlier may be applied to a specific case.

We are going to begin our study of rubber in the city in our country where more rubber goods are manufactured than in any other city in the United States. It is Akron in northeastern Ohio—often called the "rubber capital" of our country. Find Akron on your maps. Let us see what this airplane view of Akron tells us about the city. Did you notice the many tall buildings and busy streets as well as the many factory buildings?

This airplane view shows more clearly one of the twenty large rubber plants in Akron where rubber goods ranging from rubber bands to dirigibles are made. Do the buildings look like those of any other factories you have seen? Did you notice that in some ways they remind you of textile mills, but unlike textile mills, some of the rubber factories in Akron are low and others tall buildings.

Let us look at our maps again to see, from what the legend tells us about size of cities, what we can add to our picture of Akron. What does this map show that helps you to see where labor for the rubber mills is obtained?

In the list of the rubber goods manufactured, tires are the leading item. Over 125,000 tires are turned out each day.

Do not these things make you wonder why Akron is the chief rubber city in our country?

Let us examine the following maps to see if they may suggest some reasons. What does the population map show? The railroad map? The coal fields map? In the following account check the ideas you got from the maps and see what other facts you can find that help to explain the importance of Akron in rubber manufacturing.

The facts you have found so far only deal with our own country.

Before we can truly understand the rubber industry in Akron we must see how work in other parts of the world also plays a part. Besides the factory buildings, the workers, the power, the money to carry on the work, the railroads for transportation, and other facts you have found, Akron must have raw materials to use. From your study of our country does United States produce the basic raw material—rubber? Why not? What does this graf showing "Sources of Crude Rubber Imported into the United States" tell about where most of the crude rubber comes from? What sorts of regions do you remember these to be? Can you picture the workers gathering latex from the well-cared-for rows of rubber trees on a plantation in Malaya? These pictures of Malaya may help you do that. Is there anything that surprises you about where most of the rubber is obtained? Since Brazil is nearer to us than the Far East did you not think most of the rubber came from the Amazon forests? These pictures showing the work of the wild rubber gatherers in Amazonia may suggest a reason. The following reading will help you check your reasons.

How does the crude rubber reach our country? This map shows the routes over which the rubber is shipped and the ports from which it is shipped. What port ships most of the crude rubber? What do you think you would see then in Singapore? How does this picture of a port scene at Singapore compare with what you expected? Over what route do most ships carrying crude rubber to our country come? Do you not wonder why the longer route is used? In the reading on page — you will find some facts to help you. At what American port would you find most of the huge bundles of crude rubber being unloaded? Why?

Before the rubber used in Akron's rubber factories reaches them you see many other workers in different ports of the world have played a part. Without them Akron's whole business life would suffer greatly.

In a similar way other rubber manufacturing districts of the world can be tied into the world pattern of rubber. These few exercises show what I mean by guidance. They are of the kind I would use in working orally with a class, but with slight changes could be used in written guide directions. Whether Akron is at your front door or not makes no difference in so far as using it to provide the starting point for a study of rubber.

TESTING IN GEOGRAPHY AT COLLEGE LEVEL*

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More time and thought are devoted to the construction of college tests than is ordinarily supposed. An environment unfavorable to longevity of questions on the one hand, and conducive to constant trial with new types on the other, makes the task a time-consuming one.

Worthy ideals or objectives are held forth: The test must be discriminative, valid, reliable, fair—to the subject and to the student. It must be economical of time, not only that of the class but also the instructor's. In a particular instance one or more but presumably not all of these ideals will be realized in practice, depending on the special or temporary factors influential at the time. Tests must be constantly revised in part or in whole; the subject-matter changes or current events may shift topics of emphasis, the teacher improves his presentation, the average level of the class rises or lowers, occasional advantage may be taken of criticisms by a student body now more articulate than formerly, invalid and unfair items are discovered, there may be a strong presumption that fraternity and sorority houses possess copies of earlier tests. The instructor must be continually on guard against the temptation to use old test items and outmoded examinations, however good or useful these were in the beginning.

It is thus apparent that many factors play important parts in the shaping of a test in college geography. No attempt will be made here to classify and evaluate these factors; rather it is proposed to present some questions which have seen recent service in the classroom. These questions are selected to illustrate three testing techniques which seem to possess two advantages. In the first place, the techniques economize time used in test construction. The maps and pictures on which the items are based do not become distributed among the students, and question sheets without them are meaningless. In each case an ample variety of questions are available, allowing judicious substitution of items as necessity demands. In the second place, the methods appear to be adaptable to different levels of geography training.

* This paper summarizes in part the results of a project aided by the Educational Research Bureau of the University of Minnesota, with Dr. Edgar B. Wesley, adviser, and Miss Olive Mather, assistant.

OUTLINE MAP QUESTIONS

In preparing a test for a class which has studied the larger features of a continent, say South America, effective use may be made of the blackboard outline wall map. Several flight lines with arrows showing the direction of possible air journeys are drawn in chalk at selected points. The separate lines are designated by letters, e.g., A A′, B B′, etc. Assume that three lines are thus drawn: one from the upper Llanos pointing southeastward to the vicinity of Sao Salvador, Brazil (A A′); a second transecting the continent from east to west, say from Iquique to Victoria (B B′); and a third from the vicinity of Santiago to Buenos Aires (C C′). The following questions relate to these possible flight lines: (1) "Assuming a flight from A to A′, name in the order in which they would be observed from aloft, the principal natural vegetation regions." (2) "Assuming a similar flight from B to B′, name successsively from west to east the major geographic regions which would be observed." For the third line the question reads: "What changes occur in amount and distribution of rainfall as one proceeds from C to C′?"

These questions are of a factual character, testing the recall of items in assignment and lecture, allowing little opportunity for application of principles but enforcing a broad view of continental geography. The questions can easily be thrown into a purely objective form or made the basis of a more extended discussion depending upon what is desirable at the time and the length of the test of which this series is a part.

Questions testing similar facts could be asked without the cartographic device but there is a general and a specific reason for its use. As a general principle it is desirable to grasp every opportunity for the use of maps in tests since by so doing, preferably early in the course, desirable study habits are formed thru focusing attention upon the teaching tool most closely identified with geography. Specifically, the flight lines facilitate the grading process by localizing the site and by exerting a partial control over the answer. In place of the wall map, the outlines may be traced on the blackboard or reduced to stencil form to accompany the question sheet. In the latter instance, however, a new stencil must be cut in case the teacher wishes to alter the lines or add to their number. Moreover, if a stencil is made the teacher is tempted to use the maps more than once, and copies become distributed among

some of the students, thereby invalidating the results of any related test. By use of the blackboard map the life of the question is greatly lengthened. Maps or sketches of this sort, easily prepared and simple in form, offer many possibilities as a basis of test questions.

TESTING WITH PICTURES

Pictures deserve a higher place in geography testing than is usually given them. For the presentation of its fundamental concepts no subject depends more upon pictures than geography, notwithstanding which they are usually neglected at examination time. In the majority of cases where they are so used, pictures provide an interesting mental exercise rather than a means of arriving at definite individual ratings.

Granted certain mechanical equipment, there is no valid reason for not using pictures as a part of any searching test over the subject-matter of systematic or regional geography. They fulfill an important educational mission and usually consume a considerable portion of the class time; they are amenable to testing devices and they aid in differentiating the class on the basis of performance; they represent one part of the course for which no cramming is possible, and the class as a whole finds such a test interesting and stimulating, perhaps because of its novelty.

In venturing into the field of picture-testing, several difficulties and dangers must be overcome or avoided. In the first place, the teacher must be willing to spend from eight to ten hours preparing a test which may take up only twenty minutes of class time. Secondly, only a small proportion of the pictures used in class will be found suitable for testing purposes. No simple rules may be given for the evaluation of pictures for testing; it depends in part upon their geographic quality and in part on how the pictures have been used in class. The elements which contribute to a useful picture in geography teaching have been discussd in these pages by Halverson and others;[1] but even the best picture, in the hands of a careless, unskilled or poorly trained teacher may become very ordinary indeed, while an apparently poor picture, rightly used, becomes an important vehicle of instruction. Pictures used in class as a

[1] See L. H. Halverson. Pictures in the Teaching of Geography, JOURNAL OF GEOGRAPHY, Vol. 28, (1929) 357-368; and Lora M. Dexheimer. Picture Study in Geography, 334-340.

means of entertainment or as a sideshow will not bring satisfactory results in testing.

In the selection of a picture for testing, one must consider not only its visibility and its geographic quality, but also the degree of prominence accorded it in class and whether or not the view shows too much or too little. The teacher must avoid the dangers of making the test either too easy or too difficult, perhaps unfair, and thus to prevent a normal class distribution. Many pictures, while possessing geographic quality, will be found unsuitable for testing purposes because the scene is so familiar or so readily analyzed that no real problem is presented.

Since successful picture tests, at least in large classes at college level, require a definite control over student responses, the objective type of test is found desirable. The most reliable forms of such tests seem to be the multiple choice, the reverse multiple choice, and the matching type. In the multiple choice types the slides numbered consecutively are shown for a half-minute, the response being made on previously prepared mimeographed sheets, the student selecting one of five choices. The matching test technique is administered as follows: The teacher has already at hand twenty testing slides and copies of a mimeographed sheet on which ten carefully worded descriptions correspond with ten of the twenty pictures. While each picture is in view the students write their own description of the scene, having learned that mere localization or identification is, in this test, insufficient. When all the pictures have been shown the answer sheet is handed out on which the students match their own answers with those previously prepared. An obvious objection to this type of picture test is that it is not economical of class time. Multiple choice tests are handled more expeditiously but require less ingenuity on the part of the student.

This by no means exhausts the possibilities of picture testing. Tests of identification of scene or activity are admissible. Pictures not used in the actual course of instruction may also provide suitable testing material. Students at college level should be able to recognize, in scenes not previously shown, the relative maturity of cultural or natural landscape, a type of culture or drainage pattern, or climatic and physiographic types as revealed by natural vegetation or surface configuration. Grafs, diagrams, and cartograms, often available in slide form with certain portions masked off during the test, add to the range of possibilities.

Functional Questions

Professor Barrows[2] expresses a generally accepted ideal of geography teachers in saying that "the outstanding educational objective of geography . . . is to help make purposeful thinkers and successful doers, not to create animated gazetteers." Geography tests, that is to say, must include functional as well as factual questions. The functional question attempts to provide a situation in the solution of which the student must apply general

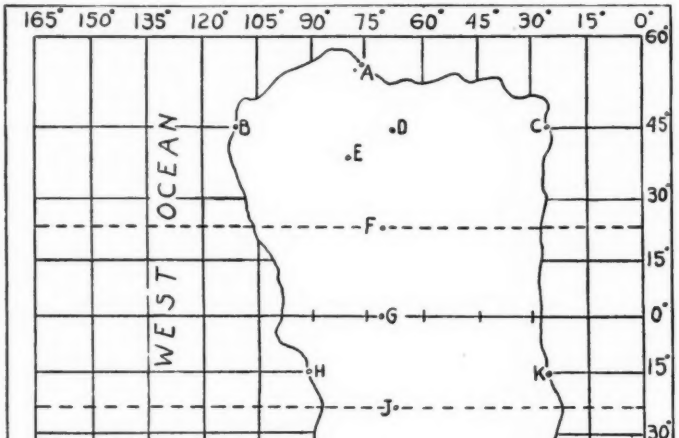


Fig. 1

principles or reason from facts and definitions which have been learned in other connections. Such situations are notoriously difficult to provide.

In the liberal arts colleges, the introductory course variously called Principles, Elements, Introductory or General Geography, has become quite standardized in this country. Topics treat of broad earth or space relationships, map projections and map interpretation, climatic factors and types, other environmental elements and man's distribution and his purposeful activities. It is learned among other things, that there is a tendency toward a systematic arrangement of the great world regions, especially as exemplified by climate and related phenomena.

[2] Harlan H. Barrows. Some Critical Problems in Teaching Elementary Geography. Journal of Geography, 30, (1931) 353-364.

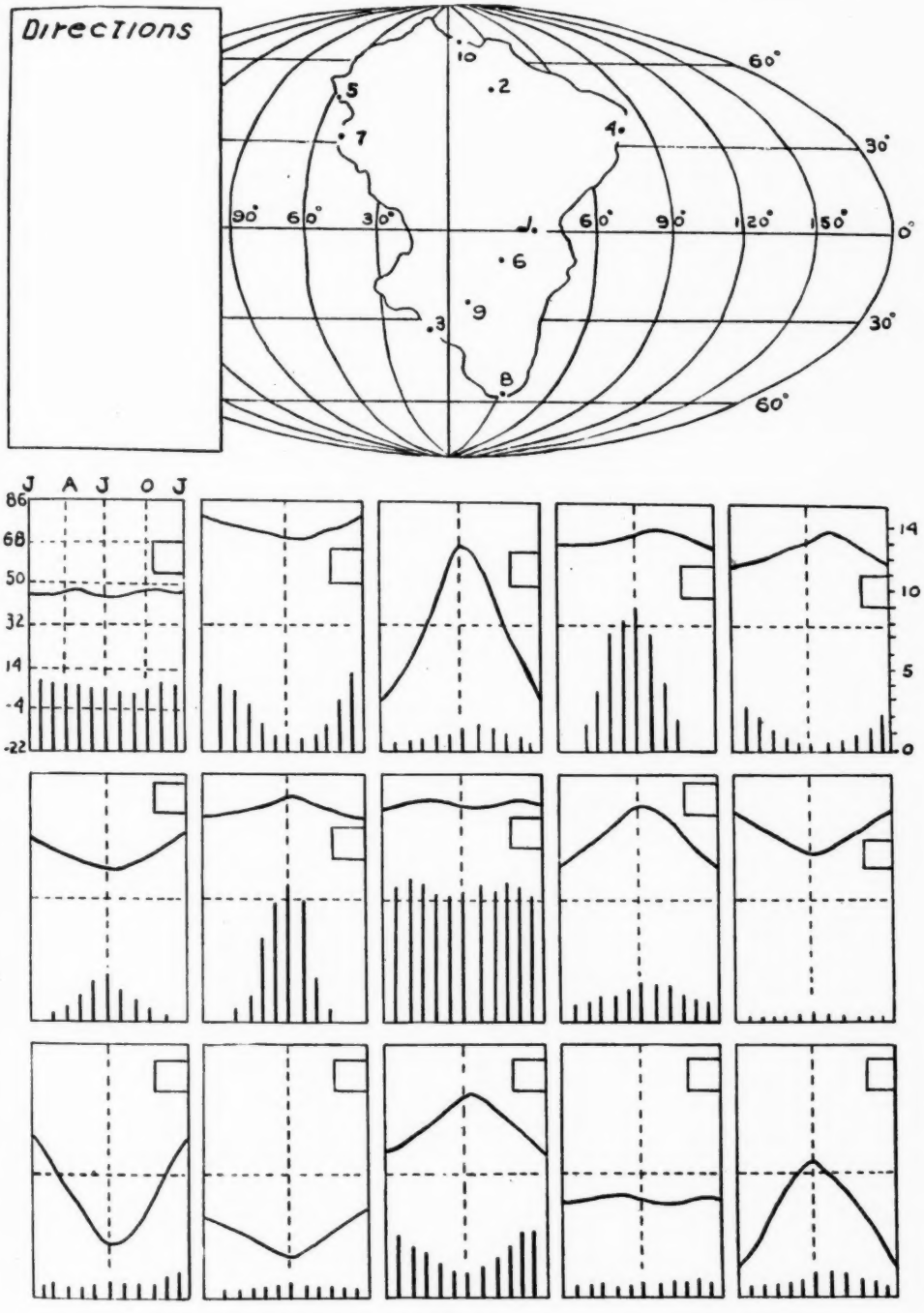

Directions
10
2
5
7
4
1
3
9
6
8
60°
30°
0°
90°
120°
150°
J A J O J
86
68
50
32
14
-4
-22
14
10
5
0

FIG. 2

The ability of the student to carry over these general principles and broad conclusions to a new situation may be tested by the use of what has been called the imaginary or hypothetical land area. Commencing with a simple case (Fig. 1), the student is told that the map shows "an imaginary continent drawn on a standard map projection. The land area of the continent is presumed to lie at or near sea level, but in other respects it is typical of the actual con-

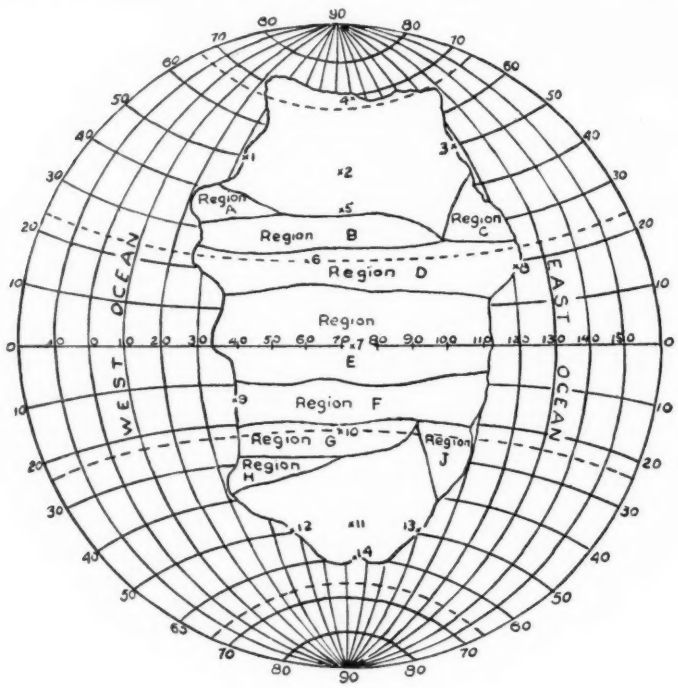


FIG. 3

tinents and any general rules which apply to them and their surrounding oceans apply equally to this one." A large number of fair questions may be based upon this map. For purposes of economy of space the questions have been put in multiple choice objective form but essay or subjective questions are equally possible. Here are a few examples:

a b c d e The projection used is (a) Goode's homolosine, (b) Polyconic, (c) Mercator's, (d) Mollweide's, (e) none of these.

a b c d e The approximate distance in miles across the continent at the equator is (in miles) (a) 3000, (b) 3500, (c) 5000, (d) 6500, (e) 8000.

a b c d e The continent lies wholly in the (a) northern hemisphere, (b) land hemisphere, (c) western hemisphere, (d) southern hemisphere, (e) eastern hemisphere.

a b c d e At Place G the sun is vertical (a) only on December 21 each year, (b) at the equinoxes, (c) at noon on the equinoxes, (d) at the beginning of each of the four seasons, (e) thruout the year at midday.

a b c d e Place B would have warmer winters than Place C because (a) B is nearer the equator, (b) B is nearer an ocean, (c) B is on the windward side of the continent, (d) B has longer summer days than C, (e) cold ocean currents flow along the coast at C.

a b c d e Winds at Place L would (a) be highly variable, (b) prevail from the west, (c) prevail from the southeast, (d) be counterclockwise, (e) be none of these.

A few weeks later, following a survey of major climatic types in which liberal use of climatic charts and grafs has been made, the student is prepared to encounter a more complicated problem, but one along the same general lines (Fig. 2). The basis of the test is another land mass, drawn upon a different projection, on which ten places are located by number. Below the map are fifteen climatic grafs depicting possible combinations of temperature and rainfall. The problem is for the student to choose from the fifteen grafs the ten which apply to the numbered places, inserting in the small rectangle within the graf the number of the place whose climate it represents. Twenty-five minutes are allowed for the completion of the test and to do so successfully the student must have at his command a sound knowledge of the principles involved.

The third member of this sequence of tests (Fig. 3) is suitable for part of a final or comprehensive test. The regions outlined represent a composite and generalized picture of the several types of climate to be found in the assignments read by the students in the class for which the map was designed. The map is believed to possess some utilitarian value for the course in which it is used but is, of course, not designed for scientific purposes. In addition to the regions, places are located by number and the land area is drawn on still another projection. About 150 questions have been based upon this map, assuming that some questions similar to those in the preceding tests will be asked. For example, a question on map projection might be:

a b c d e The type of projection used is (a) orthomorphic, (b) stratographic, (c) homolographic, (d) polyphase, (e) hypsoidal.

Many students will choose, to their later embarrassment, one of the likely-sounding coined words in this list. Other questions relate to types of climate, ocean currents, prevailing winds, presumable vegetation formations and major human activities. One of the advantages of such a series of tests, and appreciated by the student, is that those who have failed on earlier questions are later

given a chance to make good by solving a more difficult problem. There are, of course, many other types of functional questions designed to test the degree of understanding, mastery and skill which students have acquired.

Functional as well as other questions may be framed either in the objective or in the essay form. As here presented they are objectively stated. This is merely because these questions have been taken from tests originally designed for large freshman-sophomore classes in which no teaching assistants are available. These same tests, it must be added, contained a small sampling of questions of the essay type. In the more advanced classes, with limited enrollments, the essay type of test is more frequently employed. This seems to be in harmony with the general practice in our colleges at the present time.

WHY DO WE HAVE AN INTERNATIONAL DATE LINE?

(A Simple Analysis of the Concrete Day)

ELMER BRILL
Chicago, Illinois

It is very common in scientific thinking to find a certain abstract idea or conception so related to a concrete object or, more especially, position in space that we are able to analyze the idea into certain elements and connect or relate each element to a particular position in space.

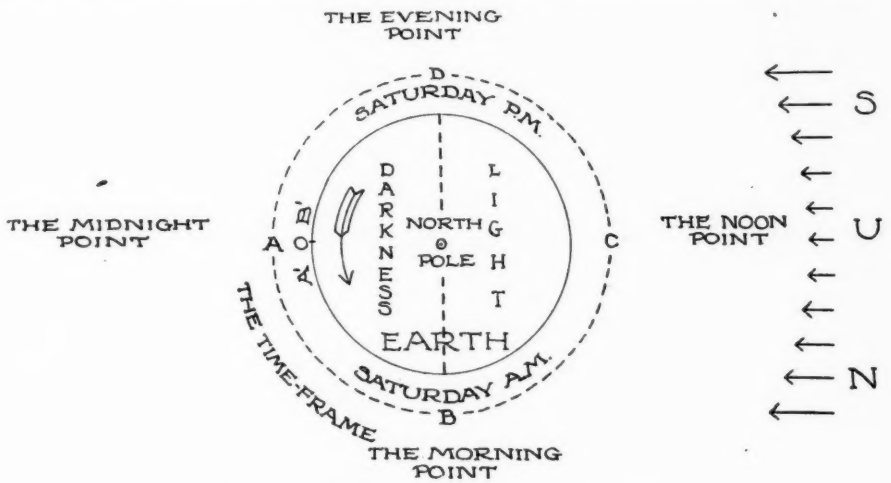
TIME: ABSTRACT AND CONCRETE

For instance, the abstract unvarying flow of the idea of time has been divided up into certain very familiar elements such as daylight, darkness, morning, evening, noon, midnight by the spatial position of any certain point on the earth's surface relative to the sun. To be more specific, we could say that the abstract idea of a particular unit of time called a *day* is merely the duration or passage of twenty-four hours but that the concrete or practical *day* we are acquainted with is the division of these twenty-four hours into the elements of morning, evening, 8 A.M., 4 P.M., etc. Mere duration of twenty-four hours is uneventful, and therefore we have no basis for distinguishing its parts; the day of morning and evening is full of distinguishable variations. The twenty-four hour day is

quantitative and abstract; the day of morning and evening is geometric and concrete.

THE CONVENTION OF EARLY AND LATE

Altho, primarily, the words "morning" and "evening," denoting *spatial phenomena* (marked by the rising and setting sun), have no meaning in connection with *absolute* time; by convention we are accustomed to consider morning as *earlier* in time and evening as *later*. Therefore it is natural to suppose that the *early* part



For convenience, when any point coincides with A, the old day for that point ends and the new day begins.

of the twenty-four hours of abstract time should be called its "morning" and the *later* part its "evening." As a matter of fact, however, it must never be forgotten that sunrise is *early* only because by convention we start the concrete day at midnight. The correspondence between the concrete day and the abstract day is purely arbitrary. The visualization of this *arbitrary* correspondence is perhaps the chief value of the accompanying diagram.

RELATIVITY OF THE CONCRETE DAY

The concrete day is relative to points on the earth's surface. Therefore an *absolute* moment of abstract, uniform time corresponds to *every* possible moment of concrete or relative time, since every point on the earth's surface has at the same time a different

portion of that day which is divided primarily by darkness and light. In ordinary speech then, by *day* we mean a day or portion thereof *relative* to a certain point on the earth's surface.

Altho the abstract and concrete must often be wedded in thought, to accomplish this union without confusion is very difficult without some schematic representation such as here given.

For convenience, we assume that the axis of the earth is perpendicular to the plane of the orbit and that we are looking down upon the earth from a position directly "over" the north pole. Let A, B, C, D be *points in space* determined by the relative position of the earth and sun. *Light* and *darkness,* too, (that is, the regions of space *near* the earth's surface where light or darkness reigns) are spatial positions—not something adhering to the surface of the earth. Since this relative position varies but little in a twenty-four hour day, for present purposes we may consider that the spatial frame of points does not vary relative to the earth.

The Starting Points of Two Series

Considering the earth at rest for the moment, let A′ be a point on the earth's surface at an infinitely small distance east (in the direction of the arrow) of a certain point called the zero point (which at the time is directly "under" A). Then B′ will be a point on the earth's surface at an infinitely small distance *west* of the zero point. Now when any point on the earth's surface (say A′) moving eastward (in the direction here indicated by the arrow) coincides with A, the portion of concrete (or distinguishable) time applicable to this particular point is called midnight. When A′ coincides with B, we say it is daybreak *for A′* or about six o'clock in the morning. Similarly with all the other points in the concrete time-frame. Therefore the time-frame itself constitutes an identification of the twenty-four hour flow of abstract time relative to points on the earth's surface. The coincidence of a point on the earth's surface with an identifying point on the time-frame constitutes a certain portion of the day for that particular point. Since concrete time is determined by the correlation of two sets of points (namely, those on the time-frame and those on the earth itself) and since we have already selected one of the points on the time-frame (the midnight point) as a starting-point, it is only reasonable to expect that it will likewise be necessary to select another point on the earth as a starting-point. We have here two never-ending series (points on the time-frame and points on the earth) correlated

with each other; and we must have a starting-point in both series, just as it is necessary to have a zero point for positive and negative numbers. The whole matter hinges upon the fact that every unending ordinal succession (or series) must have a starting-point which can be only *arbitrary*.

THE CONCRETE DAY CONSTANTLY SURROUNDS THE EARTH

As we have already seen, any particular moment of absolute time corresponds to all possible moments of a complete, concrete day. Therefore, let us again imagine the earth at rest in the position shown by the diagram. With the earth in this position, to each point on the earths' surface is allocated (by virtue of its position) a particular moment (portion) of the concrete day of morning and evening. Starting with any arbitrary moment in absolute time, we can give to this spatial, concrete day spread around the time-frame an arbitrary name of some portion (day) of a larger division (week) of concrete time. Let us say that the day under consideration is Saturday. Then A′ will have just passed from Friday night to Saturday morning, and B′ is just ending Saturday night and ready to begin Sunday morning. It is thus easily seen that when *time is spread out in space,* A′ is twenty-four hours later[1] (in concrete time) than B′ or B′ is twenty-four hours earlier than A′, seeing that there is twenty-four hours difference in time between Saturday morning (or midnight of Friday-Saturday) and Saturday night (or midnight of Saturday-Sunday). With regard to any *certain* point, this difference is an actual difference of abstract time since the two moments applying to the same point are separated by a real *duration* of twenty-four hours while the point is rotating around the entire time-frame; but with regard to *two* points (even tho infinitely close together, such as A′ and B′), the difference in time is not actual *duration* but a purely *nominal* difference due to position in space. While A′ starts Saturday, B′ starts Sunday; and when A′ starts Sunday, B′ is starting Monday. B′ is always twenty-four hours earlier (in the sense of occupying a position on the time-scale more advanced, farther along, or later) than A′. The midnight point starts a new day for every point on the earth's surface in turn. Twenty-four hours later (that is, farther along on the absolute time-scale), when each point has had its day

[1] In the sense of being farther back in order (or first, therefore *earlier*) on the *absolute* time-scale, implying slowness or lateness in the point itself. But in regard to the portion of *time* applied to the point, it must stand first or earlier on the time-scale and therefore be called *earlier* time.

started and the first points are ending that same day, the midnight point starts the *next* day for all the points in turn. Thus every twenty-four hours the midnight point starts a new day for every point on the earth's surface, but the *last* point for which that day is started will only finish that day twenty-four hours later. But since the *first* and *last* points may be infinitely close together (as A′ and B′), which one shall be considered "first" or "last" (as well as the relative position of all the points between) evidently depends entirely upon which point on the earth's surface we choose as the zero point. Since our choice is entirely arbitrary, we may be guided entirely by convenience; and since all points infinitely close (but separated by the zero point) will vary one concrete day in time, we shall find it convenient to have this zero point (or meridian) located in uninhabited parts of the earth or (still better) on the ocean. This zero meridian is called the International Date Line; and since its selection is purely arbitrary, of course it does not need to follow any certain meridian but may run zig-zag or any way convenient.

Points just west of the date line (as B′) will have Sunday morning or Sunday noon while those just east (as A′) will have Saturday morning or Saturday noon (as shown by the diagram)—and so for all other moments (portions) of the concrete day.

A Point Moving Relatively to the Earth Changes Its Time

And now, referring to the diagram, let us imagine the earth at rest in the position shown. If a point on the earth's surface change its position relative to the surface, it will thereby change its moment of concrete time relative to what it would have been had it remained in its original position and also relative to the time that *still* obtains at the original position. In effect we can cause a point on the earth's surface to move by causing a human being to move. If a man at point A′ move eastward until he coincide with C, he will change his portion of concrete time from Saturday morning (just after midnight) to Saturday noon—thereby advancing *his* spatial or positional time and making it *later*.[2] If he makes a complete circuit, he will add a day to his reckoning. Let us imagine that our traveler makes the circuit instantly (since actual time does not figure anyway in this static, spatial arrangement of concrete

[2] Here the local or positional time is arbitrarily related to notions of *early* and *late*, which have true meaning only in reference to absolute time, and "later" is used in the sense of the local time being later in order on the time-scale—the point itself being considered advanced or *earlier*.

time), passing from Saturday morning to Saturday evening and gaining twenty-four hours of concrete time. However, upon crossing the date line, the time becomes a day *earlier* (or Saturday morning again), thereby correcting the advance in concrete time caused by advancing along the time-frame relative to the earth's surface.

Conversely, if a man start at B′ and travel westward, he changes from Saturday night to Saturday morning (twenty-four hours of concrete time *earlier*). But upon crossing the zero point on the earth where Saturday night begins, the time is advanced twenty-four hours later to Saturday night again. Thus, while two points on the earths' surface may have concrete time as much as twenty-four hours apart, the International Date Line prevents the variation being any greater because of movement along the surface of the earth. In other words, it forces the apparent time of the moving point (traveler) to correspond to the actual concrete time of the *fixed* points; or it corrects the traveler's illusion that he is gaining or losing time. Of course the traveler *does* gain or lose concrete time; but, since concrete time has only an arbitrary relation to *true duration of twenty-four hours,* it must not be allowed to vary therefrom more than one day.[3] This can be done by making the traveler's time correspond to the fixed points on the earth's surface. Otherwise, each fixed point would at the same time have an *infinite number* of concrete times (moments), depending on how many travelers had visited it, which direction they had traveled, and how many times they had circled the earth. It is, of course, always the exact *concrete time of the day* that the traveler thinks it is; but if he circles the earth westward, it will be a day *later* in the week and if he travels eastward, the true concrete time (not varying more than twenty-four hours in any case from abstract, absolute time) will be one day *earlier* in the week. The fact that in reality the earth itself is rotating and the further fact that it takes a traveler a day or many days to go around the earth has no effect on the matter other than modifying the amount of real, abstract duration (with which we are not now concerned) necessary to accomplish the process. Concrete time being essentially a spatial and static matter, we may look at it primarily in its static form quite free from complications of motion.

[3] However, there is always *one* point (varying from moment to moment) that varies twenty-four hours from the *true* (or abstract) time.

GEOGRAPHY IN THE ELEMENTARY AND SECONDARY CURRICULA

In response to numerous requests relative to the position of geography in the curricula of the elementary and secondary schools, the National Council of Geography Teachers presents the following statement, as a possible aid in curriculum construction.

Place and time are basal factors in all human relations. "The earth is the stable stage on which the accelerated drama of humanity is being played. The study of geography beyond the elementary school, to the very end of school and college days, holds out one of the brightest hopes of a saner staging of this drama that vitally concerns us all."[1] Knowledge of the natural setting in which man and nations function and of the part which natural factors play in the interpretation of human affairs are critical elements in the solution of many social problems. Numerous human disasters, such as the destruction of millions of acres of farm land, and the efforts of man to carry humid-type agriculture into arid lands, could have been avoided had our people been informed in the modern type of geography.

We are confronted constantly by international strife. Commonly strife is based upon the need or desire to acquire and control natural resources such as minerals, harbors, rivers, agricultural lands, trade routes, etc. Frequently more pleasant sounding reasons are offered for public consideration. Another basis for international ill-will is ignorance of the every-day problems of living which people face in lands other than one's own. The more one knows of the means of support for people in other lands, the farther he sees into the attitudes and policies in those lands, the less "strange" or "unreasonable" people in those lands seem. "The science of elementary geography contributes without fail, and in a large measure, to those understandings, and attitudes that are the bases of just, harmonious relations between peoples of different countries and of different sections within a country."[2] It is of vital importance that our citizens should possess the knowledge that would enable them to more correctly interpret international relations and human motives.

Geography, like other fields of knowledge, has a contribution to make that is distinctive and which is essential to an understand-

[1] Reference 21, p. 125.
[2] Ibid. p. 133.

ing of, and to the solution of many human-welfare problems. This potential contribution has been largely disregarded in the American system of education. In this respect many European schools are superior to ours.

Among these contributions may be mentioned the following:

1. Geography in education deals primarily with interrelations between man and his natural or earth environment. Efforts on the part of man to make adjustments to his natural surroundings are universal and involve some of the major problems of man. No other field of knowledge deals systematically with these interrelations.

2. It contributes a knowledge of the specific uses man makes or may make of natural resources and, in so doing, it contributes to a knowledge of climate, soil, surface, coal, iron, oil, forests, harbors, rivers, and other natural features and conditions. Man's effort to utilize natural assets to the best advantage and to cope with natural handicaps, affects his daily life and thinking. No other subject supplies this body of knowledge of interrelationships between man and nature which are so essential to an understanding of human affairs.

3. It contributes to a realization of the interdependence of nations and of regions within a country; it shows how the people in any region or nation depend on people of other regions or nations in their efforts to develop their natural resources, and to exchange resources or finished products. Too often the activities of man are "taught" without an understanding of the natural conditions upon which those activities are based. This commonly leads to a continuous compounding of erroneous thinking.

4. It contributes a knowledge of place, and its associations, as a coordinate of time—both basal factors in the interpretation of human endeavors.

5. It contributes a knowledge of the natural setting that is helpful in understanding many significant facts presented in social studies such as history, economics, and sociology, etc.

6. It contributes directly to an understanding and appreciation of the efforts of man to live better in the natural setting of the region in which he resides. Lack of such appreciation helps to explain many of the strained relations and bitter struggles between human groups that have occurred in the past or exist today. Such a sympathetic understanding is essential to peaceful relations.

7. It contributes an appreciation of the fact that in explaining the evolution of human society, whether sectional, national, or

international, the natural setting in which that evolution took place is one important factor. "There can be no real understanding, appreciation, or effective solution of world problems without recognition of the significance of earth environment in the evolution of human history."

8. It contributes to an "understanding of common human interests in the production of raw materials, their manufacture and marketing; to an understanding of the significance of natural resources in the well-being of people and why those resources are a subject of international discussion."

9. It leads "to a realization that the highest individual success, prosperity, and happiness are dependent upon the existence of similar conditions among other individuals, whether this be within a given local group, within a country as a whole or between countries; in other words, a recognition of the rights of others and the substitution of cooperation for aggression."

Such fundamental knowledge, ability to interpret, and appreciation of man's relation to his earth environment, as are here outlined, are essential to a broad view of human relations thruout the world, and contribute directly to the solution of many group, national, and international problems.

Some schools may find it convenient to develop geographic instruction in accord with one formula and some by another. We hold that excellent work may be done by following any one of various procedures. However, we urge the retention of the distinctive contributions that geography may make, or that it may make more effectively than can any other subject, in any curriculum revision that may be undertaken. We also urge that sufficient time be assigned to any unit so as to develop ability to use geographical materials accurately and to think correctly in terms of information they supply. This requires more than mere superficial information. We also urge that a competent geographer be invited to participate in the preparation of any geographical curriculum.

To make such geographical work effective, adequately qualified teachers are essential. The qualifying standards should, at least, equal the educational requirements in any other field of knowledge. This necessitates thoro preparation of teachers in geography in the teacher training institutions. Curriculum makers should recommend that such training be provided. In some states geographical training of teachers is now far advanced and in those states excellent geography teaching is being done. In other states the geo-

graphical work in teacher training colleges is woefully inadequate. Such "below standard" colleges must improve their geographical offerings and their geography teaching staff, before the geographical work of the school system will function effectively. High grade geographical work should not be expected when the subject is taught by teachers who have had no training.

Committee

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Approved by the Board of Directors of the National Council of Geography Teachers at its meeting at Syracuse, N.Y., Dec. 30, 1936.

ALISON E. AITCHISON
President

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    Note: This entire number of *Education* was devoted to geography. Mr. Whittlesey's article and Mr. Young's article in it might also be cited.

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EDITORIAL NOTES AND NEWS

"International Understanding Through the Public-School Curriculum," is the title of Part II, of the Thirty-Sixth Yearbook of the National Society for the Study of Education. This volume presents material of great interest to geography teachers. The Society's committee, responsible for the Yearbook, had no geographer member, hence it is especially significant that as much space is devoted to geography as to any other single subject in the curriculum. In the school curriculum section 10 pages are devoted to primary work, 16 to English literature, 14 to mathematics, 24 to history (3 articles), 24 to geography (3 articles), 12 to social studies (1 article), 38 to the whole group of natural sciences (3 articles), 14 to modern languages, 8 to the classics, 10 to music, 14 to the fine arts, 8 to physical education, 12 to recreation. Geography is second to none in the emphasis given.

In the Canadian section on Curriculum Practice it is interesting to note that the plan followed is essentially the same as recommended in The Teaching of Geography (Thirty-Second Yearbook). Geography is treated first in 1¼ pages. History is assigned less than 1 page, civics and economics, together, about 1 page, esthetic arts 1 page, mathematics and science ½ page, modern languages ¾ page, and extra-curricular activities ¾ page.

In the chapter on The Preparation of Teachers, Dr. Bagley recommends "that colleges in preparing teachers provide rich courses in geography suited to the abilities and interests of students on the collegiate and university levels." Geography is the first specific course which he recommends.

It is, indeed, encouraging to learn that geography is gaining recognition in American schools, comparable to that given to other subjects. It is especially pleasing to have this recognition come from educators who are not geographers, since they cannot be accused of being special pleaders. There is abundant evidence that geographical education is advancing on a highway of sound foundation, and in a manner that will command and retain respect. Many workers in the field are aware of the constant effort required to direct and hold that advance during the past two decades. The responsibility for sound constructive work in the future is very great. Eminently qualified leaders with vision, who build for years ahead, who are capable of selecting the gold from the dross, are essential. Dr. Bagley's recommendations for adequately trained teachers are vital. Sentimental emotion makes a strong appeal in human relations, particularly in proposed international understandings, and biased regimentation may become the order. Truth must prevail. Sciolism may easily destroy all that has been gained.

The Wallace W. Atwood Fund for Research in Physical Geography

Thru the courtesy of the Secretary of the Association of American Geographers, the following excerpts have been taken from Dr. Atwood's letter announcing his bequest to the Association.

"I have long believed that all those who were interested in the development of geography as a science should be encouraged to carry on field studies. I am particularly anxious to help those engaged in teaching, whose research work is not financed by any state or federal government.

"For this purpose I wish to provide at this time a fund of $2,500, which I shall present to the Association thru you. Five hundred dollars of that amount I wish to have awarded as a research grant at the Syracuse meeting of the Association, and the balance I wish to have held as an endowment fund, the income from which to be used by the Council of our Association in making subsequent awards for the promotion of research work. It is my suggestion that the awards be made once in four or five years, when the income may have accumulated to a sufficient amount to assist a research worker to spend a considerable period of time in the field. I want the award to be made each time to one who has demonstrated ability to do original work in the field of

geography and who has in hand a problem in physical geography which promises to produce important results.

"I think it would be appropriate for the Council to request those who receive these grants from the Association to present the results of their field work, conducted with the support of such a grant, at one of our national meetings and to offer to the Annals of the Association an opportunity to publish those results.

"I trust that the example which I have set will be followed by others, and that we may have, as an Association, funds available for the promotion of research work in the various fields of geography."

Four meritorious projects were submitted to the committee appointed by the Association to make the award. The one receiving the unanimous vote was by Dr. Richard Joel Russell, Louisiana State University, Baton Rouge, La. This project which deals with the deltas of the Mississippi received the award because of its great scientific interest and importance, its potential economic significance, and the eminent qualifications of Dr. Russell for carrying his project to a prompt and valuable conclusion.

Dr. Russell will use the award to help finance his field work and studies on the Volga River delta.

DR. HOWARD H. MARTIN, Chairman of the Department of Geography, University of Washington, has been appointed a member of a staff of five leaders on the program of the Seattle Public Forums. These forums are sponsored by the Seattle Board of School Directors in coöperation with the United States Office of Education, and extend over a period of two months. Dr. Martin's lectures deal with different problems in the Orient.

The third annual meeting of the Association of Pacific Coast Geographers will be held in Denver, Colorado, June 23-25 in conjunction with the Centennial meeting of the A.A.A.S. Geographers who are not members of the A.P.C.G. but who are planning to attend the Denver meeting and would like to present papers are invited to communicate with the secretary, Dr. H. F. Raup, University of California at Los Angeles, or with the president, Dr. Howard H. Martin, University of Washington, Seattle. The Association's second yearbook is now available from the editor, Otis W. Freeman, State Normal School, Cheney, Washington.

A complete list of summer sessions abroad, "Holiday Courses in Europe, 1937," is available at the World Peace Foundation, 40 Mt. Vernon St., Boston. The cost is nominal. Additional information may be had from the Institute of International Education, 2 West 45th St., New York City.

DR. ELMER EKBLAW of Clark University was the guest speaker at the March meeting of the Boston Association of Geography Teachers. A social hour and tea preceded the lecture which was held at the Twentieth Century Club. Mary T. O'Connell is the president of the Association.

University Extension News, Vol. 17, No. 18, Feb. 10, 1937, published by the University Extension Division of the University of Nebraska, is devoted to a program depicting the sequence of stages of economic development preceding Nebraska's admission to statehood and continuing to the present age. The program was given as a pageant by the Walnut Junior High School, Grand Island, Nebraska. Copies of the maps used in the pageant show boundaries and political units as they have evolved from pre-territorial days to 1937. The news bulletin is suggestive of similar assembly programs that might be adapted to any state or region by geography sections in coöperation with other branches of the curriculum.

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Dr. Hartshorne is an assistant professor of geography at the University of Minnesota and particularly interested in political geography. He spent the year 1931-32, as a fellow of the Social Science Research Council, in a study of the German-Polish border area. Among numerous other papers by him are: Geographic and Political Boundaries in Upper Silesia, *Ann., Assoc. Am. Geog.*, 23:195; The Upper Silesian Industrial District, *Geog. Rev.*, 24:423; Recent Developments in Political Geography, *Am. Pol. Sci. Rev.*, 29:785, 943; Suggestions on the Terminology of Political Boundaries, *Mitteilungen des Vereins der Geographen an der Universität Leipsig, Heft* 14/15, 180.

The Leipzig Trade Fairs, by Eugene Van Cleef of Ohio State University will be the next article in the series on Europe.

The Power of Japan and China: A Study in Political Geography. By Margaret Riggs 177

Miss Riggs, of the State Teachers College, Alva, Oklahoma, did her graduate work at the University of Chicago and George Peabody College. Her article on the Missouri Ozarks appeared in the JOURNAL, December, 1936. Other contributions include, The Influence of the Pastoral Industry on Australian Exploration, *Econ. Geog.*, July, 1936; Geography: Is It Worth Being Taught Well? *Oklahoma Teacher*, December, 1936.

Forestry and the Public Schools. By George A. Duthie 186

Mr. Duthie is Chief of the Section of Education in the Washington office of the Forest Service. He is a graduate of the University of Michigan and has spent twenty-eight years in the Forest Service, during which he has served as supervisor of several of the national forests. He is now directing the preparation of a series of teachers' outlines for public school use. Teachers interested in forest conservation may communicate with him.

How Berry Gully Was Conquered. By Brice M. Latham 193

Mr. Latham is a specialist in the Soil Conservation Service and, at present, is located at Spartanburg, South Carolina. He is author of, Soil Erosion and Tax Delinquency in the Piedmont Area of South Carolina, and Changes in Crop Organization for Soil Conservation in the Piedmont Area of South Carolina. Teachers interested in conservation should write the Soil Conservation Service, Department of Agriculture, Washington, D.C.

Changes in Routing Raw Silk from the Orient to United States Factories. By Christine Hahn 197

Miss Hahn, of the Roosevelt Junior High School, Milwaukee, Wisconsin, contributed, Cargoes From Abroad, and Grain Traffic on the Illinois River, to the JOURNAL, January, 1935 and May, 1936, respectively.

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